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USDA • APHIS • PPQ

CPHST NEWS

East Meets West II

Summer 2006

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Inside this issue:

In the January 2006 *CPHST NEWS* issue, the newly appointed Eastern and Western Regional Directors, Vic Harabin and Phil Garcia, were presented and welcomed into their positions. The Regional staff continues to grow and develop with the selection of four new Assistant Regional Directors (ARDs), **Gary Clement**, **Steve Johnson**, **Carlos Martinez**, and **Sherry Sanderson**. With the challenges and transitions the Agency encounters, it is significant to bring aboard talented individuals to provide enriched perspectives and harmonized visions. PPQ's new ARDs have shared their insight on their vision, goals, and challenges.

Gary Clement is a graduate of Virginia Polytechnic Institute and State University in Blacksburg, Virginia with a B.S. in Agronomy, Plant Protection Option with a double major in Entomology and an M.S. in Plant Pathology and Physiology. Throughout his college career, he worked four summers as a PPQ Aid on programs such as gypsy moth survey, detection and eradication; white-fringed beetle survey; witchweed survey; biological control; and barberry eradication. Prior to his first permanent position with PPQ, he was employed as a County Agricultural Extension Agent in Botetourt County, VA. Gary's assignments with PPQ have included: Area Survey Coordinator for CAPS covering 6 states in the Northeastern Region, Survey Coordinator for the Cooperative National Plant Pest Survey and Detection Program (precursor to CAPS) in VA and WVA, and PPQ Officer, Mexican Border Operations, Brownsville, TX. Following these assignments he served as a Regional Program Manager in the Southeast Regional Office in Gulfport, MS for 8 1/2 years where he had the responsibility of managing domestic programs, the Cooperative Agricultural Pest Survey (CAPS) Program, the Regional Safety and Health Program, and backup for AQI activities in eight states plus Puerto Rico and the Virgin Islands. Gary served as the State Plant Health Director (SPHD) of Pennsylvania from 1994 to 2006 and served in a dual position of SPHD and National Plum Pox Operations Director from early 2000 to the end of fiscal year 2001. Currently, Gary resides in Raleigh, NC as an ARD for the southeastern states. Gary is a native of Roanoke, VA. He and his wife, Diana, have two boys, ages 18 and 22 and a married daughter, age 28.

Steve Johnson graduated from the University of Nebraska in Lincoln, Nebraska with a B.S. in Agriculture in 1973. He began work with the Nebraska Department of Agriculture in 1973 as an entomologist. He was appointed State Entomologist and SPRO for the Nebraska Department of Agriculture n 1980. In this position, Steve directed the plant pest survey and detection program, the nursery inspection and certification program and the export certification program. He was a member of the Horticultural Inspection Society, Central Plant Board and National Plant Board. He chaired the National Plant Board Quarantine and Nursery Standards Committee, and served on the USDA APHIS PPQ EXCERPT Committee. Steve was President of the Central Plant Board from 1988 to 1989 and President of the National Plant Board from 1997 to 1999. As National Plant Board President, the organization conducted the Safeguarding American Plant Resources, Stakeholder Review of USDA APHIS PPQ. Steve was the State Plant Health Director of Nebraska for USDA APHIS PPQ from July 2002 to April 2006. He served on the National CAPS Committee from 2003 to 2006. In March 2006, he accepted the ARD position supervising the northwestern SPHDs. Steve grew up on the family farm in Oakland, Nebraska. Steve and his wife Diane have two children, son Blake 16 and daughter Lauren 11.

Carlos Martinez began his career with Plant Protection and Quarantine (PPQ) in 1985 as a Plant Protection and Quarantine Officer on the

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Florida Citrus Canker Eradication Project. At the conclusion of the project he was transferred to Illinois where he spent 7 years performing import/ export inspections, conducting pest surveys and eradicating outbreaks of gypsy moth. In 1992 he was selected as the Officer in Charge of the Pittsburgh, Pennsylvania Work Unit and managed nine offices throughout the State of Pennsylvania. In 1995 he accepted the position of Port Director for the Charleston, South Carolina Work Unit where he managed the import and export activities at the ports of Charleston, Georgetown and Beaufort. In 1998 Carlos was selected as the SPHD for the State of Georgia where he managed all PPQ activities in the state. Today, Carlos's responsibilities include managing the Eastern Region's program operations.

In 2004, **Sherry Sanderson** came to work for USDA, APHIS, Plant Protection and Quarantine (PPQ) as the Emergency Program Coordinator for the Western Region. Prior to making that commitment, she served as State Plant Regulatory Official (SPRO) for New Mexico while holding the position of Bureau Chief of the Entomology and Nursery Industries Bureau with the New Mexico Department of Agriculture (NMDA). At NMDA she was responsible for administration of state laws governing the mitigation of plant pests and the sale of horticultural plant products, the supervision of the federal phytosanitary certification program, the development and administration of eradication programs for pests of concern, preparation and administration of pest detection cooperative agreements, in addition to acting as the liaison to USDA APHIS PPQ and other federal and state regulatory agencies. She served as the State Representative to and President of the Western Plant Board, and represented the Western States on the National Plant Board (NPB), Board of Directors. She also served as the NPB liaison for the New Pest Advisory Group. Sherry's new appointment as ARD involves overseeing program and administrative operations for the Western Region.

Sherry Sanderson

What are your goals and objectives of your positions and regions?

Gary Clement: The goals and objectives of my position align with the PPQ mission of safeguarding agriculture and natural resources from the risks associated with the entry, establishment, or spread of animal and plant pests and noxious weeds. In terms of interaction with the two other ARDs in the region, I feel that we not only can serve as adequate backups for each other's states or program assignments, but we can effectively serve as resources for the Regional Director in all aspects of PPQ activities. Based on our varied backgrounds, we have a solid foundation in PPQ domestic and AQI programs to share within the region to effectively guide and manage the work at hand.

Steve Johnson: My goal is in the Western Region is to provide support to the State Plant Health Directors to make their state/federal relationship the best it can be in their states. I want to make certain that they have the tools and support to succeed.

Carlos Martinez: The goal of my position is to ensure that the Eastern Regional office provides the necessary support and leadership that our field offices need in order to safeguard American agriculture.

Sherry Sanderson: As Assistant Regional Director for PPQ Western Region, my responsibilities include supporting the mission of PPQ, safeguarding agriculture and natural resources from the risks associated with the entry, establishment, or spread of animal and plant pests and noxious weeds. This is accomplished by implementing the goals and objectives laid out in the 2006 Operational Plan. These goals include preparing and responding to emergencies, improving our exclusion activities at port of entry inspection stations, discovering exotic pests as early as possible to ensure effective mitigation, enhancing pest management activities, strengthening our export certification program, and maximizing the effectiveness of our resources.

What is your role in achieving those goals?

Gary Clement: As Assistant Regional Director (ARD) for the southeastern states within the Eastern Region, I feel that it is my role to guide and manage an effective safeguarding workforce within assigned states by strengthening the PPQ field structure. It is my plan to work effectively with the State Plant Health Directors (SPHD) by supporting their needs to accomplish program activities that are in harmony with the PPQ mission. I will strive to manage these program activities within the southeastern states by being sure that adequate funding, personnel and training are available to do the work.

Gary Clement

Steve Johnson: To better the state/ federal relationship, I believe we should leverage our funding in the states by working with state departments of agriculture, universities, commodity groups and other stakeholders to improve our plant protection and certification programs.

Carlos Martinez: I have been tasked with managing the staff in the Regional Office. I am responsible for ensuring that the PPQ Eastern Regional office provides the tools and necessary support for our efforts in the field.

Sherry Sanderson: I have been entrusted with the responsibility of coordinating and giving direction to the regional programs, as well as internal regional office operations. I am to ensure overall program objectives are achieved

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within the established budgetary, manpower, and time limitations. I also have the responsibility of providing operational leadership to implement the National Incident Management System (NIMS) to develop and cultivate an emergency response network within the Western Region, and oversee emergency coordination and incident management. It is my duty to assure that regional and field staff have the tools and support required to fulfill the PPQ mission and accomplish their assigned duties in a timely and courteous manner. PPQ employees are its greatest resource and asset.

Which projects or issues have priority with your groups?

Gary Clement: A high priority within PPQ at this time is developing and implementing and effective emergency response capability to address introduced plant and animal pest situations and natural disasters. As an ARD, I have supported field development through ICS training, field exercises and temporary duty assignments. A second priority for me has been to work closely with the Citrus Canker Program (CCP) in Florida in light of the quarantine change that now restricts the movement of citrus by encompassing the entire state. Although I came to the job in March 2006, the controversy associated with the CCP continues. It is my intention to assist in the implementation and management of the Citrus Health Response Plant (CHRP) in Florida through the SPHD, CCP Director and state cooperators. This plan will replace the CCP which was designed to be an eradication program. The CHRP addresses management options that will allow for the interstate movement of Florida citrus to non-citrus producing states and for foreign exports.

Steve Johnson: We are really blessed to have some excellent regional program managers and SPHDs in the Western Region. With our recent involvement in Potato Cyst Nematode Emergency Program, I was impressed by the quality of people on the ground that made the program successful. Various issues have been handled well by working as a unified command, such as the custody chain of samples; data quality control; timely, reliable reporting and storage of data; and survey protocols. Proper identifications and improved diagnostics tools have been essential to the rapid response to the potato cyst nematode finding. I've been involved for a number of years on the Integrated Survey Information System (ISIS). Having been a field surveyor for years, I know the importance of reliable data, data entry, and reporting in a timely manner. For each emergency, we need to respond better. We don't need to reinvent the wheel for data to collect and manage data. USDA APHIS PPQ has come a long way in utilizing GIS technologies. Western Region now has an excellent grasshopper website with GIS mapping. SPHDs and SPROs use this mapping tool to make accurate management decisions. The weed management areas, in many western states, have given APHIS PPQ another opportunity to interact with stakeholders. The saltcedar biological control efforts this year are predicted to yield great benefits in the management of this invasive species.


Steve Johnson

Carlos Martinez: There are two items that come to mind. Earlier this year we completed our 2006 Operational Plan. Currently we are in the process of ensuring that we will meet the goals that we identified in the plan. The second item is our responsibilities under Homeland Security Presidential Directive/HSPD-9. HSPD-9 requires that we develop comprehensive and fully coordinated surveillance and monitoring systems for plant pests and diseases. It also requires that we have the capabilities to respond quickly and effectively to a terrorist attack, major disease outbreak, or other disaster affecting the national agriculture or food infrastructure. With our experiences from last year's hurricane season we know we have more work to do before we are fully capable of responding to a major disaster.

Sherry Sanderson: The Western Region Operational Plan prioritizes emergency preparedness and response. A great deal of progress has been made within PPQ as training on the Incident Command System (ICS) is being offered throughout the regions, and Incident Management Teams are in the process of being developed. Implementation of ICS, in coordination with increased and more directed pest detection activities, will enhance PPQ's ability to detect and respond to the ever increasing risks associated with increased trade and introductions of plant pests and diseases. Other priorities include the evolution and transformation of the information and technology section, utilization of standardized data management systems, the incorporation of Geospatial Information Systems, the strengthening of the Cooperative Agricultural Pest Survey (CAPS) program, redirection of the biocontrol program, and the refurbishing of the Domestic TDY protocol in order to enhance our emergency response capabilities.

What challenges have you encountered and how are they overcome?

Gary Clement: The greatest challenge for me thus far has been how to effectively manage the many PPQ programs within the Region, specifically those within my assigned states. In order to do so, I have worked hard to develop partnerships both internally with PPQ personnel and externally through state cooperators. These partnerships help to foster cooperative relationships which provide a collective effort to accomplish PPQ programs in the most efficient and effective manner.

Steve Johnson: The challenge is to respond to the vast number plant pest introductions each year. We are improving our pest detection effects each year. The PPQ Pest Survey Specialists and their contour parts, the State Survey Coordinators, are making a difference. There is more outreach to the general public and more targeted surveys on commodities or hot zones, which produces early detection and gives us more of a chance to succeed. It is great to see these pieces coming together and if I can help make this happen. I'd see that as a success.

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Carlos Martinez: Change is always difficult for employees. The Regional staff is used to operating with just the Regional Director and two ARDs in place. With my position being vacant for two years the Regional staff needs to get used to the new reporting structure and a new management style. The best way I have found to overcome this challenge is to make myself visible by regularly interacting with the staff in person.

Sherry Sanderson: One of the biggest challenges has been learning a new job while supporting the ongoing and new pest detections within the region. The Western Region has an abundance of dedicated employees in the field and in the regional office, and I am learning how to utilize their talents efficiently and effectively. I have had the opportunity to bring in several employees on developmental assignments and appreciate and have been inspired by the talent I have found. It has always been said that the strength in PPQ is the people.

What are the advantages and benefits of stepping into these ARD positions together?

Gary Clement: Carlos Martinez and I stepped into the ARD positions on the same day in March 2006. In my mind, I believe that we both brought to the Regional Office a strong field perspective of PPQ Programs and can reinforce the need for support at that level to effectively develop, implement and maintain these programs. Having 3 ARD positions within each of the PPQ regions has fostered a "team effort" both regionally and interregionally. Based on this change, I believe that the interregional relationships are better than ever, with discussions underway about holding joint ARD meetings, shadowing assignments, teleconferences, etc.

Steve Johnson: Starting with the other new ARDs is exciting. I know we have a common goal to improve the operations of the regions and APHIS PPQ as a whole. I hope that the new ARDs can get together to discuss the issues the effect us all and improve on our operations.

Carlos Martinez: Gary and I have worked together previously and we have similar backgrounds. We are both committed to having management work together as a tem and use our past experience to benefit the agency. There is new leadership in place that has different ideas and is willing to try new solutions. Most of us have worked together for many years so we do not hesitate to

Carlos Martinez (left) volunteering at a medical mission in Haiti.

communicate with each other. This gives us an opportunity to build better collaboration and consistency between both regions.

Sherry Sanderson: This fresh perspective, in addition to the institutional knowledge that Tom Chanelli and Gary Carpenter bring into this new equation, have the potential for fantastic results. This is a time of change for the regions, new Regional Directors, new ARDs, new perspectives, and a new PPQ environment as a result of the formation of CBP. It is a time to rethink how we do business and make changes. There is an opportunity to create a new bond between the two regions.

How does CPHST work with you? How can CPHST best serve you?

Gary Clement: I think that the collocation of the PPQ ERO with CPHST has been advantageous to both groups. With cross invitations to attend meetings, I feel that CPHST is better prepared to serve PPQ needs, because of the increase in communication. This also goes the other way in that CPHST can better inform PPQ about new technologies and how they can be integrated into PPQ field operations in such a way that programs are more efficient and effective. This enhanced interaction has been an asset to both agencies and I only see it getting better. I feel that CPHST can continue to assist PPQ by providing sound science-based tools that will allow us to effectively implement and manage our programs. Technologies such as those needed to detect and delimit plant pests, quickly identify plant pests, develop effective treatments, etc. are important contributions that CPHST has provided. Such support can only enhance PPQ programs now and into the future.

Steve Johnson: We worked well with CPHST to develop new technologies for the management of rangeland grasshoppers. CPHST has led the way on building Lucid keys for grasshoppers and other plant pests. CPHST should be at the cutting edge of technology innovations that will improve our operations. We need to work with CPHST so they understand our needs for new survey and detection tools. CPHST scientists need to interact with our field people to understand their target audience and develop these tools to accommodate their work.

Carlos Martinez: In the East our relationship with CPHST has been enhanced by the collocation of staff in the Venture IV Building. Seeing each other everyday has allows us to build relationships that did not exist previously. Most recently CPHST has been an integral part of in helping us evaluate options to deal with new pest introductions. The information the staff provides allows us to make good science based decisions when dealing with these new outbreaks.

Sherry Sanderson: The regions will continue to develop stronger relationships with CPHST. As new risks are identified and new pests are found, the regions must work in tandem with CPHST to develop the safeguarding and control strategies necessary to protect and preserve agriculture and natural resources. We need CPHST at the discussion table to give us recommendations based on sound science that support program operations. We also need the forecasting and far reaching predictions to inform us of what risks and pests we need to be on the look out for. We need CPHST to look globally and tell us what is on the horizon, and help us develop the technology needed to protect our domestic territory. We need CPHST to help us develop strategies and survey methods that detect the invaders, and to explore the globe for biocontrol agents to control those pests that have become established.

We need to find a partner

Submitted by Gary Clement, Steve Johnson, Carlos Martinez, & Sherry Sanderson

Weed Biocontrol Target Canvassing Results for 2005-2006

Summer 2006

Beginning in 1996, and approximately every five years thereafter, APHIS-PPQ has reviewed the status of weed biological control programs supported by the Agency and surveyed state cooperators to identify current weed biocontrol priorities. In June 2005, the Biological Control Leadership Team (**Dale Meyerdirk**, Emergency and Domestic Programs, Riverdale, MD; **Mary Mahaffey**, Eastern Region, Raleigh, NC; **Bill Kauffman**, Western Region, Ft. Collins, CO; **Ken Bloem**, CPHST, Raleigh, NC) initiated a new survey effort. **Rich Hansen**, with the CPHST National Weeds Management Laboratory in Ft. Collins, CO, agreed to develop the survey and evaluation criteria and summarize the results.

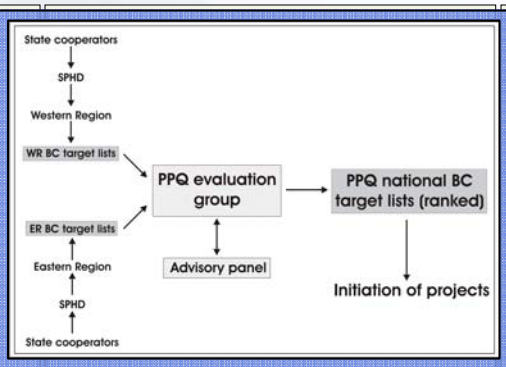

Figure 1. Weed biocontrol target canvassing and evaluation process, USDA-APHIS-PPQ, June 2005.

The general survey and evaluation process that was followed is shown in Figure 1. The Regions asked State Plant Health Directors (SPHDs) to "canvass" various land and pest management entities in each state, soliciting input on important exotic weed species that might be considered as possible targets for cooperative biological control programs. Both Eastern and Western Regions compiled state lists, and then produced a ranked regional list of the top 10 potential weed targets. Regional rankings were based on the perceived severity of each pest problem in each state and the number of states reporting each pest on its ranked list. The regional weed lists were then combined into a national list consisting of 16 candidate weeds (there was some overlap between the regional lists) and evaluated by a PPQ evaluation group. The evaluation group assessed the appropriateness and feasibility of biological control as a pest management tool for each weed based on (1) the relative value of biological control for management of each pest; (2) the potential for conflicts among biological control agents, native plants and animals and human activities; (3) the status of biological control efforts targeting each weed in the U.S.; and (4) the ultimate potential for successful biological control. The evaluation group also solicited opinions from an external advisory panel, made up of weed management and biocontrol experts from other federal agencies, state agencies, and universities. Both panels scored each of the 16 candidate weed targets for biocontrol feasibility; scores were then combined to rank the weed list. The 2005-2006 prioritized weed biological control target list is presented in Table 1.

Figure 2. Yellow toadflax (*Linaria vulgaris*), the top-ranked weed biocontrol target from the 2005-2006 PPQ canvassing effort..

Typically, PPQ works internally (Eastern and Western Region, headquarters and CPHST staffs) and collaboratively with external cooperators to develop work plans for selected weed targets. These plans include details of what needs to be done, who will be responsible for accomplishing various components of each project, the time frames required, and funding for completion of different project phases. A more detailed package of information on the 2005-2006 survey effort, the status of ongoing biological control efforts against previously-selected weed targets, and summary information on each of the new weed biocontrol targets is being finalized. Please contact Rich Hansen or one of the members of the PPQ Biological Control Leadership Team if you would like a copy or have questions.

Table 1. Weed Biocontrol Target Canvassing Results for 2005-2006.

Rank	Weed Common Name	Species	Weed Location		Score
1	Yellow toadflax	*Linaria vulgaris*	ER	WR	44
2	Tropical soda apple	*Solanum viarum*	ER	WR	43
3	Hound's-tongue	*Cynoglossum officinale*		WR	39
4	Dyer's woad	*Isatis tinctoria*		WR	36
5	Canada thistle	*Cirsium arvense*	ER	WR	31
5	Musk thistle	*Carduus nutans*	ER	WR	31
7	Hawkweed(s)	*Hieracium spp.*		WR	24
8	Scotch thistle	*Onopordum acanthium*		WR	22
9	Common reed	*Phragmites australis*	ER	WR	20
10	Japanese knotweed	*Polygonum cuspidatum*	ER	WR	18
11	Perennial pepperweed	*Lepidium latifolium*		WR	16
12	Multiflora rose	*Rosa multiflora*	ER		12
13	Catclaw mimosa	*Mimosa pigra*	ER		9
13	Cogongrass	*Imperata cylindrica*	ER		9
13	Giant hogweed	*Heracleum mantegazzianum*	ER	WR	9
16	Tropical spiderwort	*Commelina benghalensis*	ER		1

Submitted by Ken Bloem

Commodity Imports Analysis and Operations (CIAO)

Summer 2006

The Commodity Imports Analysis & Operations Branch (CIAO) was established in 2005 to unite Plant Health Programs (PHP) risk managers and import specialists into a single staff. The CIAO staff is also composed of risk data analysts, a regulatory policy specialist, and administrative support personnel. CIAO supports the development of import regulatory policy to prevent the entry of exotic pests and diseases into the U.S. and facilitate safe trade.

Left to right: Paul Gadh, Arnold Tschanz, Laura Biven, Bill Aley, and Shaharra Usnick

CIAO provides technical leadership and guidance to resolve and clarify regulatory policy issues pertaining to the importation of plants for planting, non-propagative plant material, and miscellaneous processed plant products. CIAO's primary responsibility involves managing regulatory projects for new market access, or the amendment of existing import regulations of plants or plant products. CIAO also develops regulatory policy pertaining to plant products moving interstate from Hawaii and the U.S. territories.

Once the USDA receives a petition from a foreign country for market access, the Phytosanitary Issues Management (PIM) staff forwards it to CIAO. CIAO reviews the petition and supporting documentation, and submits a request to CPHST to initiate the development of a pest risk assessment (PRA). CIAO establishes teams comprised of experts from PHP, CPHST, and Policy and Program Development staffs. The teams identify risk management options that will be evaluated by CPHST, and they work collaboratively on resolving pest risk issues pertaining to the rulemaking process. Following the receipt of draft PRAs from CPHST, CIAO risk managers select risk management measures that provide the appropriate level of phytosanitary security, which are operationally and technically feasible. PIM staff communicates with the foreign country to determine if they can implement the selected risk mitigation measures. When concurrence is received from the counterpart foreign agency, CIAO risk managers prepare risk management documents, and import specialists develop regulatory work plans. The risk management document, PRA, and regulatory work plan are submitted to the Planning Analysis and Regulatory Coordination (PARC) staff to initiate the rulemaking process. CIAO import specialists serve as the technical contacts on proposed and final rules, and they work with other APHIS staffs to respond to comments on proposed rules.

First row (left to right): Leon Eckell, David Lamb, Donna West, Claudia Ferguson, Alex Belano, Shirley Wager-Page, Ahmad Chawkat, and Walter Gould
Second row (left to right): Tony Roman, Sharon Porsche, and Polly Lethonen

CIAO is revising the plants for planting regulations 7 CFR 319.37. This revision will require a significant interaction between CPHST scientists, and CIAO. The Q-37 revision will include the consolidation of several quarantine regulations that affect plants for planting including the sugar cane, rice, corn and wheat quarantines. A significant number of PRAs will be needed to support the development of regulatory policy for high risk plants, and for commodities in the NAPPRA category (not admissible pending pest risk assessment). CIAO is currently developing the regulatory work plan to implement the use of Regulatory Systems Approach Protocols (RSAPs) to mitigate the risks associated with plants for planting imports.

CIAO looks forward to continue working closely with CPHST and other staffs to ensure that import regulations are science-based, and our decision-making process is transparent.

Submitted by Claudia Ferguson
Regulatory Policy Specialist, CIAO

Dr. Tim Gottwald visits CPHST and NCSU in Raleigh

Summer 2006

Each year the Plant Pathology Graduate Students at North Carolina State University (NCSU) invite one plant pathologist to present a seminar in memory of a former student, Rosie Perez. This year **Dr. Tim Gottwald** with the USDA Agricultural Research Service (ARS) was honored by the Plant Pathology Graduate Students at NCSU. Gottwald has been involved with many PPQ efforts involving citrus diseases and plum pox, and often provides epidemiology expertise to other issues.

Gottwald's choice of seminar title, "Battling Hurricanes, Dragons, and Disease: The chronicles of the citrus canker wars and the uprising of Huanglongbing," predicted the informative and stimulating visit that was to follow. The seminar focused on two important citrus diseases, highlighting both the epidemiology and the cultural impacts on the quarantine. The "citrus canker wars" segment focused on the biological, climatic, political and legal factors that impacted the epidemics. The introduction of the leaf miner curtailed the efficacy of tree removal as an eradication method. In one research area, Gottwald and colleagues found the number of infected trees increased from 38 to 1751 in 18 months. The movement of the pathogen during Hurricane Wilma was examined in one study and overlaid with weather data. The front end of the hurricane carried much more inoculum and host material than the back; so it is not just the overall path of the hurricane that is important in the distribution of the pathogen. Based on this study, his program estimated more than 169,000 acres were impacted by Hurricane Wilma, and this acreage covers about 20% of the remaining citrus acreage. Gottwald reviewed the impact of litigation and political decisions on eradication efforts.

Tim Gottwald (third from left in the back row) and CPHST scientists

Gottwald indicated that citrus greening, the newest of the citrus diseases, is also the most serious disease we have encountered in the U.S. The fruit is off- flavored, it can drop early and the trees ultimately die. Dr. Gottwald indicated the lifespan of a citrus tree drops from 40-50 years to 15 years. In addition to the dire predictions, the pathogen is difficult to detect. It has a latent period between infection and symptom development. Even with symptoms present, the pathogen can be elusive. The vector, a not so silly psyllid, was detected before the disease. Unfortunately, there is little correlation between the percent of the psyllid vector positive with the pathogen and disease incidence.

The Golden Dragon or HLB in a grapefruit tree.

During his short stay with CPHST, Dr. Gottwald managed to visit with a large number of CPHST scientists, risk analysts and administrators in the Director's Office and the Plant Epidemiology and Risk Analysis Laboratory, as well as with Eastern Region Program Manager **Patrick Gomes**. Open discussions were held on multiple citrus diseases, plum pox virus, epidemiology methods, modeling and risk analysis.

Submitted by Betsy Randall-Schadel

Aromatherapy and Medfly SIT: An Update

Summer 2006

As noted previously in the *CPHST News* (May 2005), CPHST scientists in Hawaii have been developing a technique dubbed "aromatherapy" to enhance the mating ability of sterile males of the Mediterranean fruit fly (Medfly). Male Medflies are strongly attracted to particular odors. Work in Hawaii has demonstrated that males exposed to certain scents (orange, ginger, and manuka oils) procure more matings than non-exposed males in competitive trials. The previous article noted that aromatherapy had been implemented at the USDA-CDFA Preventative Release Program in southern California, where tests demonstrated that 36 ml of ginger root oil effectively increased the mating success of 13 million males held in a single emergence trailer.

Buoyed by the success at the California facility, CPHST scientists investigated the effectiveness of aromatherapy at the world's largest Medfly eclosion facility located in Retalhuleu, Guatemala. Here, rooms were 3-6 times larger and held 6-14 times as many males as the California facility. To gauge the scale of the operation, consider that just one of the rooms subject to aromatherapy held 179 million males, or about 60% of the entire

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population of the U.S.! Despite the size of the operation, exposing entire rooms to the odor of ginger root oil (at doses of 160-400 ml; oil was applied to cotton wicks, which were distributed evenly in the eclosion room) for 24 hours improved the mating success of randomly selected males. Oil-exposed and non-exposed males were placed in separate field cages and competed against wild males for copulations with wild females. Overall, non-exposed sterile males obtained an average of 24% of all matings (wild males achieved 76%), whereas oil-exposed, sterile males obtained 38% of all matings (wild males - 62%). Thus, oil exposure resulted in a proportional increase of 58% in mating competitiveness (38/24), an increase similar to that noted in California. Planned research will investigate lower and higher doses of ginger root oil to characterize the dose-response curve for potential implementation.

Although work has continued to focus on applied aspects, observations in the laboratory revealed that females preferentially land on chilled dead males

Applying oil to wicks in eclosion room

that had been exposed (while alive) to ginger root oil the previous day compared to chilled (dead) non-exposed males. The same result was obtained whether the males were visible to females or covered by a cotton cloth, thus, blocking visual but not olfactory stimuli. Because the males were not moving or behaving in any way, oil exposure appears to be the only factor responsible for the observed female preference, suggesting the ginger aroma acts to "perfume" the male's exoskeleton. Future work will include chemical analyses of the body surface compounds of oil-exposed versus non-exposed males.

Dr. P. Rendon & field crew in Guatemala

Submitted by Todd Shelly

Bill Dickerson

Summer 2006

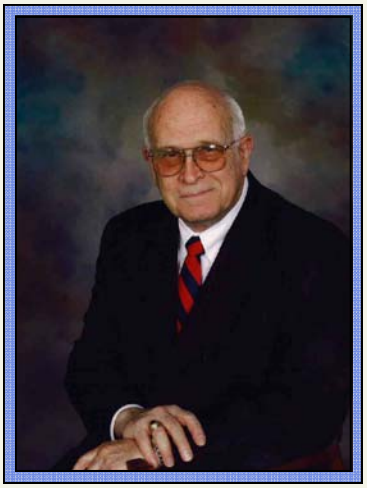
Effective March 6, 2006, Bill Dickerson joined PPQ as Coordinator of Invasive Species Activities. Bill works with Dr. David Kaplan, PPQ Assistant Deputy Administrator for Emergency and Domestic Programs (EDP). His office is located on the Centennial Campus of NC State University in Raleigh with the Eastern Regional Office and the Center for Plant Health Science and Technology. He will also serve as a key liaison for activities with state plant regulatory agencies and other Federal agencies to improve outreach, communication and clarity among all sectors and to enhance regulatory initiatives addressed by EDP.

He brings to PPQ over 26 years of experience as a research entomologist with USDA-ARS and 19 years of management experience with plant pest regulatory programs for the NC Department of Agriculture. During the last 10 years with ARS in Raleigh, Bill worked hand-in-glove with APHIS PPQ to implement the Boll Weevil Eradication Trial and subsequently to expand the successful program throughout the U.S. cotton belt.

Bill has published some 80 peer-reviewed scientific papers, served as senior editor for three books, holds a U.S. Patent, and has written a number of popular scientific articles. Over the past 8 years, he has served in a number of key leadership positions including president of the NC Entomological Society, chairman of the Nation Gypsy Moth Management Board, president of the Southern Plant Board, and president of the National Plant Board (2003-2005). For the past five years, he has also served on the National Invasive Species Advisory Committee. Along with his extensive regulatory and scientific experience, Bill brings to PPQ over 44 years of professional experience.

While he is staffed with EDP, his skills and knowledge cross over a wide range of PPQ program areas, including CPHST. We welcome Bill Dickerson to PPQ.

He invites you to stop by his office when you are next in Raleigh. He can be reached via e-mail at bill.dickerson@aphis.usda.gov or by phone at 919.855.7345.



Submitted by Bill Dickerson

Trace Element Analysis

Summer 2006

The Center for Plant Health Science and Technology (CPHST) just completed its proof of concept for the identification of agricultural commodity sources using trace element analysis. The work will be published in the *Journal of Agricultural Food Chemistry*. The technology is based on multivariate statistical analysis of unknown samples against data libraries that represent authentic samples for sources and commodities of interest.

CPHST is currently working with scientists in New Zealand to obtain samples of insects for comparative analysis using trace element analysis and isotopic ratio analysis. The isotopic ratio analysis has been used successfully in New Zealand for the source identification of fish. This effort allows CPHST to cross-validate its trace elemental approach to source identification against the New Zealand isotopic ratio approach. It also allows CPHST to obtain authentic samples from another country.

The issue of obtaining authentic samples on the surface appears to be a simple matter. However, it is very complex, not only from the standpoint of obtaining statistically valid samples, but also the logistics of obtaining samples from multiple countries. One solution to this challenge is to develop an international consortium based on the use of common validated analytical methods and statistical analysis protocols so the data libraries developed by one country could be shared internationally.

CPHST has been in contact with scientists in Europe, the United States, New Zealand, and Australia regarding their efforts in developing source identification mythologies. Several technologies are being developed to address the source identification of insects, meat, wood, soil, food, and agricultural commodities. This range of scientific approaches and development efforts speaks to the need for source identification as a critical tool for food safety, resolution of sanitary and phytosanitary trade barriers, verification of label claims, and enforcement of legal and regulatory requirements.

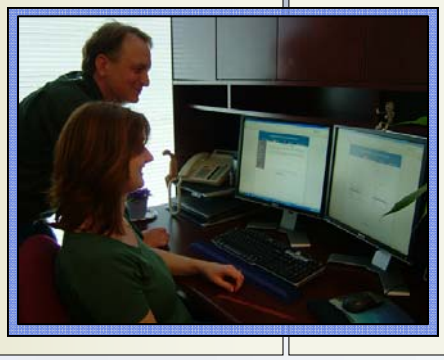
CPHST has proposed the development of a network for information sharing to the scientists identified to date working on the source identification methodology. The response to this proposal has been very positive.

Submitted by John Gallagher

Quads Cooperation Website

Summer 2006

As a result of the Quadrilateral Scientific Collaboration meeting held in Raleigh, NC on February 23-24, 2006 (see *CPHST News*, April 2006), seven initial project areas were identified for collaboration by plant health officials from Australia, Canada, New Zealand, and the United States. The multinational logistics of planning, communicating and tracking progress in this collaboration necessitates a project management tool. With that in mind, the Quads representatives supported development of a web-accessible database to facilitate scientific collaboration.

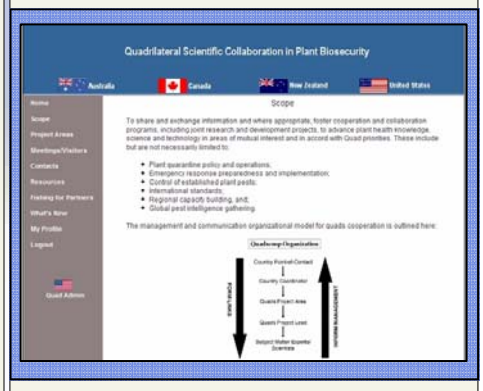


The quadscoop website (http://www.quadscoop.org/), cooperatively developed with North Carolina State University, went online in May 2006. This restricted website requires a login to access project information within the agreed project areas: pest databases/lists; Lucid keys; diagnostics (molecular and morphological); plants for planting; E-certifications; Australian Fumigation Accreditation Scheme; and phosphine treatments.

Subject Matter Experts (SMEs) from the participating countries are invited by their official Point of Contact (POC) to register in the database, and are then assigned to individual projects as appropriate.

Features of the database include:

- Project pages (tracking, document archiving, and communication fora)
- SME directory with searchable expert registry (by country and discipline)
- Calendar of events
- "What's New"



Submitted by Woodward Bailey

CPHST's 2006 Lucid3 Tool Developer Workshop

Summer 2006

CPHST's Identification Technology Program (ITP) is challenged every day with delivering to PPQ essential, effective, state-of-the-art identification tools, and providing skills and information to facilitate and promote their use, in support of PPQ's mission.

Developing collaborations with taxonomic experts to build quarantine-based identification tools is central to this effort. The ITP discovered that training experts in the use of Lucid key building software is often a prerequisite for key creation. Based on the need to release new tools, and to create a venue for interaction with potential (collaborative) tool builders, CPHST funded a workshop to train and support future tool builders on use of Lucid software, specifically the latest version 3 release, which is java-based and cross-platform.

Participants working on Lucid tools at PPQ-WR in Fort Collins.

We planned two sessions for the workshop – one at USDA-PPQ's Western Region (WR) headquarters in Fort Collins and the other at USDA-PPQ's Eastern Region (ER) headquarters in Raleigh. Four specific workshop goals were set: 1) provide training for USDA-PPQ identifiers and other taxonomists interested in building tools to quarantine-related organisms in their area of expertise and in support of their identification responsibilities; 2) accommodate participants with previous matrix key-building experience, by providing compatibility and conversion information, and discussion of issues related to program differences, for other key-building programs and previous Lucid versions; 3) provide the opportunity for all participants to benefit from the workshop, regardless of level of taxonomic or key-building experience; and 4) introduce workshop participants to other valuable and useful identification and diagnostic software recently developed and released by the Lucid development team (Centre for Biological Information Technology (CBIT), The University of Queensland).

The majority of the 30 attendees were PPQ identifiers representing many of USDA-PPQ's plant inspection stations. Others came from USDA agencies such as the Forest Service (FS) and Agriculture Research Service (ARS), and from academic institutions, including Cleveland State University, Colorado State University (CSU), Delaware State University (DSU), Florida A&M University (FAMU), Mississippi State University, Montana State University (MSU), North Carolina State University (NCSU), University of Nebraska (UN), and Utah State University.

Workshop participants were a diverse group, possessing expertise in plant pathology, botany, and entomology, and with a range of experience using Lucid and creating identification keys.

Topics covered to meet workshop objectives included 1) basic how-to instruction on program use; 2) demonstration and use of new Lucid 3 program features; 3) key building and matrix construction theory; 4) quality focus -- examples of good and bad key components, and how to make tools efficient and effective; 5) the complete tool building process: flow chart and discussion of all components and steps to take to build an entire tool from beginning to end; 6) introduction to CBIT programs: Lucid Phoenix (computer-based dichotomous key builder and player), and Fact Sheet Fusion (automatic HTML fact sheet page creation). Workshop instructors also addressed specific topics and tools brought by several of the participants, such as how molecular data might be incorporated into a Lucid tool and building a Lucid3 small grains diagnostic tool.

Based on both verbal and written evaluations at the end of each workshop session, the overall consensus among attendees was that the workshop sessions were successful in providing training and support and that holding similar types of workshops in the future should be considered by CPHST.

Wills Flowers (FAMU) "appreciated the opportunity to interact with USDA personnel and obtaining feedback" on the bark beetle for southeastern States Lucid tool he is building. **Tim McNary** (USDA-PPQ-WR) found that building Lucid tools is not that complex and that he now has the background to build his own Lucid identification tool. After a few years of floundering with Lucid tool building software, **James Baker** found the workshop to help him with the "*how to* and ideas for improving" the tool he is developing.

The 2006 Lucid3 Tool Developer Workshop supported the important objective of offering workshops to taxonomic experts, from within and outside the USDA, who are interested in developing quarantine-based identification tools in collaboration with CPHST. The ITP Team believes that the majority of workshop attendees gained essential knowledge, and that the workshop fueled their interest in initiating Lucid tools upon returning home. If you are interested in obtaining a detailed summary report of the workshop, please contact **Terrence Walters** (terrence.w.walters@aphis.usda.gov).

Lucid3 workshop participants at PPQ-ER in Raleigh.

Submitted by Terrence Walters & Julia Scher

CPHST Hosts Plant Pathology Society of North Carolina

Summer 2006

Logo designed by Heather Hartzog

The 2006 Annual Meeting of the Plant Pathology Society of North Carolina was held at CPHST Director's Office on March 14, 2006. Ninety plant pathologists and others interested in plant health issues attended this year's meeting. North Carolina has a broad spectrum of plant pathologists including private consultants and academic, industry and government scientists. In addition, North Carolina has a wide variety of plant industries. This diversity of plant pathology interests and plant crops creates a rich opportunity for lively discussions.

The theme for the 2006 meeting was "Fostering Whole Plant Health." The planning committee, chaired by PERAL plant pathologist **Betsy Randall-Schadel**, examined a variety of systems and mechanisms that promote plant health. Topics included induced resistance, the National Plant Diagnostic Network, host resistance, an integrated approach to tree health, modeling for Sclerotinia blight of peanut, seed health issues, best management practices for *Phytophthora ramorum*, and insect and disease management. Speakers included faculty and students from North Carolina State University (NCSU) as well as industry and government scientists.

The lead speaker was entomologist **Fred Gould**, NCSU. His presentation on the management of insect resistance to Bacillus thuringiensis (Bt) was well-received and prompted insightful questions. Three speakers were invited from outside of North Carolina. The keynote speaker for the meeting was **Dr. Richard Bostock**, University of California at Davis. His presentation covered perspectives on Plant Health Networks, from cellular signaling to regional diagnostics. PPQ Program Manager for *Phytophthora ramorum*, **Jonathan Jones**, and **Marc Teffeau**, of the American Nursery and Landscape Associations, presented the unique attributes needed by each organization in the development of best management practices (BMPs) for *P. ramorum*. Nestled between the talks on BMPs for *P. ramorum* and Bostock's presentation, **David Ritchie**, NCSU, discussed the relationship between avirulence genes and resistance genes in peppers. After lunch, two graduate students, **Damon Smith** and **Nrupali Patel**, discussed their research efforts and two members from industry, **Eric Honeycutt** and **Jennifer Riggs**, discussed an integrated approach to tree health and the role of seed treatments in whole plant health, respectively.

A virtual tour of PPQ and other USDA plant health activities in North Carolina was provided by staff from the Federal Seed Laboratory, State PPQ office, Eastern Region and the Plant Epidemiology and Risk Analysis Lab via displays and posters. **Debbie Stewart** and **Patricia Waszak** generated a display highlighting PPQ activities at the state level. **Sandra Walker** provided a poster on seed health activities at the Federal Seed Laboratory in Gastonia, NC. **Mary Mahaffey's** *Phytophthora ramorum* display included outreach materials and **Roger Magarey's** poster focused on climate and host mapping for this pathogen. Other activities highlighted in the tour were the New Plant Advisory Group, the Plant Alert System and Pest Prioritization, organized and presented by **Heather Hartzog** and **Kim Schwartzburg**, PERAL.

Following the oral presentations, attendees toured the Center of Integrated Fungal Research, conducted by NCSU Plant Pathologist **Thomas Mitchell**, or attended a session on employment with USDA. **Alison Neeley** and Kim Schwartzburg (PERAL) and **Michael Bechtel** (Eastern Region) presented the well attended session on "Jobs with USDA."

The full meeting program can be found in the activities section of the NCSU Plant Pathology website: http://www.cals.ncsu.edu/plantpath/activities/societies/ppsnc/06_program.pdf

Left to right: Kim Schwartzburg, Alison Neeley, Heather Hartzog, Damon Smith, Nrupali Patel, Betsy Randall-Schadel, Roger Magarey

Submitted by Betsy Randall-Schadel

Get to know the new CPHST team members!

CPHST Spotlight: Lisa Ledezma

Summer 2006

Lisa Ledezma joined the CPHST Pest Detection, Diagnostics, and Management Laboratory in Edinburg, TX as a biological science technician in April 2006. Lisa was born in Weslaco,TX. She received a BS in General Biology at the University of Texas-Pan American in May 2004. While pursuing her BS degree, Lisa worked as a student assisting in research with the USDA- Kika de la Garza Subtropical Agriculture Research Service in Weslaco, TX from 2001-2006. Lisa worked in the Integrated Farming and Natural Resources Research Unit assisting in boll weevil research. She later joined the Beneficial Insects Biological Control Unit working as a student and upon completing her BS, she began work as a technician. Lisa worked on molecular biology research developing molecular diagnostic tool for the glassy-winged sharpshooter, the sharpshooter parasitoid- parasitic wasp, and natural enemies. In her current position, she is further expanding her research experience in molecular biology assisting in the development of diagnostic tools for the fruit fly. Lisa holds five years of government biological science research experience. She has two years entomology experience and three years molecular biology research experience and is growing. Outside of work Lisa enjoys spending time with her family, husband, and four dogs. She is excited to have joined the CPHST Team and is looking forward to a long career with them.

CPHST Spotlight: Kenna Van

Summer 2006

Kenna Van joined the CPHST National Weed Management Lab in Fort Collins, CO as a lab support assistant in November 2005. Kenna was born and raised in Laramie, WY. She attended the University of Wyoming and graduated with a Bachelor's degree in Business Administration. Kenna started working for the Medicine Bow National Forest as a Range Aid in 1987 and then accepted a position with the Human Resources (HR) Department in 1990. She continued to work in HR until she and her family moved to Prescott, Arizona in July 2002. Kenna accepted a position on the Chino Ranger District of the Prescott National Forest as a resource assistant (Range). In 2003 they moved to Fort Collins to be closer to family and the beautiful Rocky Mountains. Kenna worked for the Forest Service at the Rocky Mountain Research Station as a human resources assistant until she accepted her current position with CPHST.

Kenna is married to Cody who is an imaging supervisor at Poudre Valley Hospital. They have two wonderful children, Taylor age 9 and Halee age 7. Kenna enjoys doing anything that allows her to spend time with her family (sports, riding bikes, spending time at her parent's cabin).

CPHST Spotlight: Scott Weihman

Summer 2006

Scott Weihman joined the CPHST Director's Office in August 2005 as a biological science technician for the Molecular Diagnostics and Biotechnology Program. Hailing from Michigan, Scott began his academic career studying marine biology at the University of the Virgin Islands in St. Thomas. He later transferred to the University of Hawaii-Manoa and in 1992 received his BS in Environmental Science with an emphasis in Wildlife Conservation. In order to fund his studies, Scott worked as a groundskeeper at the university and developed a skill in horticulture and landscape design. He incorporated this with his major in his final project, an exhibit design for tropical American bird species at the Honolulu Zoo. After graduating, Scott entered the Peace Corps and taught sustainable agriculture, soil conservation, and fruit tree nursery management to farmers in a remote region near the Panama Canal. Back in Michigan, Scott opened his own landscape design business. Although very successful, Scott found himself more interested in the bugs than the plants, so in 2001, Scott began a Master's program in Entomology at the University of Florida. His major was IPM, and his thesis focused on the control of the grape root borer in Florida vineyards using a variety of tactics including mating disruption. After graduating Scott worked as a graphic artist designing outreach posters for the UF Department of Entomology and Nematology. His interests include hand puppets, yodeling, wombat wrestling and collecting vintage Pepto-Bismo bottles, just kidding. When Scott's not working he likes photography, outdoor activities, sports, games, gardening, and travel.

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CPHST Awards

Summer 2006

Josie Salinas of the Pest Detection, Diagnostics & Management Lab in Mission, Texas received the **APHIS Safety & Health Individual Achievement Award** for safety and health program promotion and implementation at Moore Air Base in Texas.

David Cowan of the Pest Survey, Detection & Exclusion Lab in Otis, Massachusetts received the **APHIS Individual Environmental Excellence Award** for his achievements in the area of environmental protection which contributed to his facility faring very well during a recent environmental compliance audit and a surprise EPA inspection.

The Analytical & Natural Products Chemistry Lab (ANPCL) in Gulfport, Mississippi accepted the **APHIS Facility Environmental Excellence Award** for ANPCL's efforts to protect the environment before, during, and after Hurricane Katrina.

Alan Dowdy accepted the **DASHO's Award** on behalf of **CPHST** for our efforts during Hurricanes Katrina and Rita in 2005.

CPHST Publications

Summer 2006

Koop, A. L., and C. C. Horvitz. 2005. Projection matrix analysis of the demography of an invasive, nonnative shrub (Ardisia elliptica). *Ecology* 86:2661-2672.

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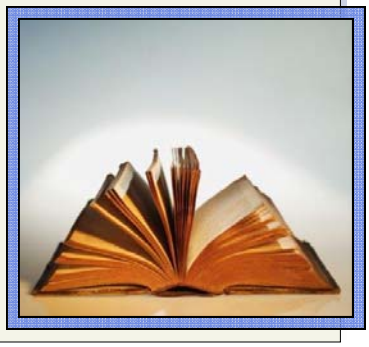
Tubajika, K. M., E. L. Civerolo, G. J. Puterka, J. M. Hashim, and D. A. Luvisi. In Press. The effects of kaolin, harpin, and imidacloprid on development of Pierce's disease in grape. *Crop Protection*, doi:10.1016/j.cropro.2006.04.006. http://www.sciencedirect.com/science?_ob=MImg&_imagekey=B6T5T-4K1X5BD-1-1&_cdi=5011&_user=4250360&_orig=browse&_coverDate=05%2F26%2F2006&_sk=999999999&view=c&wchp=dGLbVzz-zSkzS&md5=9a3f66e6c87d5437e1130aeea6842d6b&ie=/sdarticle.pdf.

Follett, P. A. and **R. Griffin.** 2006. Irradiation as a phytosanitary treatment for fresh horticultural commodities: Research and regulations. p. 143-168, In C. H. Sommers and X. Fan eds., Food Irradiation Research and Technology, Blackwell Publishing, Ames, Iowa.



Follett, P. A., **R. L. Griffin**, and **E. M. Bustos Griffin**. 2006. Irradiation as a phytosanitary treatment for insects and mites on agricultural commodities. Recent Res. Devel. Entomol. 5: 1-26.

Auclair, A. N. D., G. Fowler, M. K. Hennessey, **A. T. Hogue**, **M. Keena**, **D. R. Lance**, R. **M. McDowell**, **D. Oryang**, and **A. J. Sawyer**. 2005. Assessment of the introduction of Anoplophora glabripennis (Coleoptera: Cerambycidae) in municipal solid waste from the quarantine area of New York City to landfills outside of the quarantine area: a pathway analysis of the risk of spread and establishment. J. Econ. Entomol. 98: 47-60.

Caton, B. P., T. T. Dobbs, et al. (2006). "Arrivals of hitchhiking insect pests on international cargo aircraft at Miami International Airport." Biological Invasions 8: 765-785.